

**WHAT IS CLAIMED:**

1. A method of providing an Internet phone service comprising the steps of:  
installing software to a wire terminal, wherein the wire terminal is  
automatically connected to a mobile communication network by the software when the  
5 wire terminal becomes off the hook; and  
connecting the wire terminal to a mobile terminal not via PSTN but via the  
Internet.
2. An Internet phone system for a mobile communication comprising:  
10 a telephone;  
a connection converting apparatus for connecting the telephone to either the  
Internet or a PSTN;  
a user's computer in which software is installed for connecting the telephone to  
the Internet through the connection converting apparatus;  
15 a VoIP gateway for connecting a mobile communication network to the  
Internet; and  
a mobile telephone capable of accessing the Internet.
3. The Internet phone system as claimed in claim 2, wherein the connection  
20 converting apparatus includes:  
a hook detector for detecting a hooking state of the telephone;  
a relay for connecting the telephone to either the Internet or the PSTN,  
according to a command;  
a duplex circuit for suppressing voice leakage and side tone by converting and  
25 reconverting from a two-line telephone signal to a four-line signal for transmission and  
reception;  
a tone decoder for decoding a DTMF tone signal of the telephone; and  
a microprocessor for exchanging control data for the user's computer,  
controlling the relay to cause the telephone to be connected to the Internet when the

hook detector detects an off-the-hook state of the telephone, and providing number data to the user's computer when the microprocessor receives number data from the tone decoder.

5           4. The Internet phone system as claimed in claim 3, wherein the connection converting apparatus further comprises:

          a mode key for setting the telephone to either an Internet phone mode or a general telephone mode; and

          a ring detector for detecting a ring signal from the PSTN and providing the ring  
10   signal to the microprocessor.

          5. The Internet phone system as claimed in claim 4, wherein the connection converting apparatus further comprises:

          a switch for driving a speaker phone;  
15   an on-board speaker;  
          an on-board microphone; and  
          an analog switch for providing a voice signal from the computer to the on-board speaker and connecting a transmitting end to the microphone according to a command from the microprocessor.

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          6. The Internet phone system as claimed in claim 2, further comprising an intermediate site for mediating between a user and the mobile communication network.

          7. The Internet phone system as claimed in claim 2, wherein the VoIP  
25   gateway is a central concentrating type.

          8. The Internet phone system as claimed in claim 2, wherein the VoIP gateway is installed at a base station of the mobile communication network.

9. A method of providing an Internet phone service, wherein the method allows a user of a telephone to communicate with a subscriber of a mobile communication network by a process of originating a call or a process of receiving a call requested by a subscriber of the mobile communication network, the method  
5 including an originating process and a receiving process,

the originating process comprising the steps of:

receiving an IP address when the telephone is off the hook and inputting a number of a mobile phone;

transmitting the number of the mobile phone and the IP address to a VoIP  
10 gateway of a mobile communication network defined by the number in order to request a call; and

performing a predetermined call process by the VoIP gateway in order to connect the telephone with the mobile phone;

and the receiving process comprising the steps of;

15 determining whether the computer of a user of the telephone is in an on-line state when the subscriber calls the user of the telephone;

calling the telephone of the user using an IP address when the computer is in the on-line state; and

allowing the telephone and the mobile phone to communicate with each other  
20 when the user takes the telephone off the hook in response to the call, so that the user may communicate with the subscriber not via a PSTN but via the Internet.

10. The method as claimed in claim 9, wherein the receiving process further comprises the step of allowing the telephone to be connected via a PSTN when the  
25 computer is not in an on-line state.